Section 3. Pedagogy

https://doi.org/10.29013/ESR-22-5.6-21-24

Terzieva Galena Todorova,
Assistant Professor, PhD in Pedagogy,
the Faculty of Education
Trakia University, Stara Zagora, Bulgaria

ADAPTATION OF MOBILE GAMES FOR CHILDREN WITH HEARING IMPAIRMENTS

Abstract. The aim of the article is to study the degree of mastery by the respondents of the method of Lieberman and Houston-Wilson for the adaptation of mobile games for children with hearing impairments. 41 third-year students majoring in Pre-school and Primary School Pedagogy are participating. The training is carried out during the summer semester of the academic year 2020/2021. It is conducted online and includes the following methods – lectures, discussions, case studies.

The summarized results show that 73.1% of the respondents have a high level of adaptations to the method. 22% of the students have some gaps in two or more areas, and 4.9% show a low level of skills.

Keywords: inclusive education, adapted physical education, pedagogical students.

The main goal of the Bulgarian Sign Language Act, in force since 2021, is to form sustainable attitudes and motivation for lifelong learning and to ensure equal opportunities for deaf people to fully integrate and participate in public life. An important principle enshrined in it is equal access to quality education [2]. The main prerequisite for the optimal organization of the learning process in the mainstream school is overcoming the communication difficulties caused by hearing impairment [3, 86]. The possibilities for overcoming these obstacles now seem to be greater, as greater participation of an interpreter in the education and training in Bulgarian sign language for hearing children is envisaged. Inclusion must take place in all areas, including physical education. Mobile games are the most used means of motor learning in preschool and primary school age. Well-thought-out and organized play creates speech stimuli and favorable conditions for verbal communication between children, enriches vocabulary, expands motor skills, develops mental qualities, stimulates initiative and independence of hearing-impaired children, creates mood and partnership in the group [4, 177; 7, 60].

There are various methods for adapting mobile games for children with hearing impairments. The method of Lieberman and Houston-Wilson [5, 83–86] is introduced in the education of students majoring in Pre-school and Primary School Pedagogy. According to him, the changes are taking place in four main directions:

- Adaptation of the environment – includes all changes that reduce distraction, reduce noise, adjust lighting, increase visual signals and create optimal accessibility to the playground for children with disabilities.

- Adaptation of the equipment – involves modification of the devices used in the games, which allows the successful inclusion of children with disabilities, as they are tailored to their needs and capabilities. They can also be used by children without disabilities, without hindering their motor development.
- Adapting the rules of the game – there are many options for which one game can be played. The change is aimed at simplifying or creating alternative rules so that all children, including those with disabilities, are successfully included.
- Adaptation of instructions is associated with changes in the teaching methods. The correct selection, combination and modification of the methods for motor training is sought – verbal, visual, auxiliary-motor and tactile.

Following the method of Lieberman and Houston-Wilson and the guidelines given by various authors to modify physical activity [1, 220–223; 6, 109–116; 8, 83; 9, 261–264], the following possibilities for adapting mobile games for children with hearing impairments are outlined:

For the environment:

- Enable a child with residual hearing to use it while minimizing background noise.
- As it compensates for the lack of hearing and sight, it is necessary to take into account where the activities take place – outdoors the child stands so that the sun does not interfere with seeing what is happening, indoors – the playground is well lit.
- All important areas in the playground, as well as the facilities that are part of the game, should be of such a color as to ensure maximum visibility and orientation in the space of the child with hearing impairment.

For equipment:

- Also, for better visibility, all devices used in the game should be in well-distinguished colors.
- When there is residual hearing, sound-emitting devices can be used for better orientation.
- If the game is musical, the use of additional devices helps to better feel the vibrations.

About the rules of the game:

- All sound signals are replaced with visual ones – at the beginning and end of the activity, when giving instructions, commands or hints during the game.
- If there is residual hearing, the signals may be audible, but the teacher should be as close as possible to the child to make sure he or she can hear.
- If the child has a hearing aid or cochlear implant, it is possible to change the rules of the game so that there is no risk of breaking and injuring the child.
- Other children are used as helpers.
- When the game involves the division of teams, they should be in very well distinguishable and distinctive equipment.

For instructions:

- The child's preferred means of communication should be used – sign language, lip reading.
- If you do not learn the basic gestures of communication, an interpreter can be used.
- If the child reads on the lips, speak clearly and concretely and look in the face.
- The main method used for deaf children is demonstration.
- All actions that are shown are to be performed in the child's field of vision.
- All kinds of visual aids are used to ensure maximum understanding of the rules of the game – various visual aids that have images and text.
- If video is used, it must be captioned.
- Verbal methods may also be used in children with residual hearing or using a hearing aid or a cochlear implant.
- Feedback is always sought in the direction of understanding the rules of the game and the organization of the performance.

The aim of the article is to study the degree of mastery by the respondents of the method of Lieberman and Houston-Wilson for the adaptation of mobile games for children with hearing impairments. 41 third-year students majoring in Pre-school and Primary School Pedagogy are participating. The training is carried out during the summer semester of the academic year 2020/2021. It is conducted online and includes the following methods – lectures, discussions, case studies. Through the analysis of the decisions of the cases it is established to what extent the skills to adapt the environment, the equipment, the rules and the instructions are formed. The assessment for each area is based on a three-level scale: he or she can, can to some extent, can't. The summary shows the extent to which – high, medium, low – students master the adaptation of mobile games for hearing-impaired children by the method of Lieberman and Houston-Wilson.

80.5% of the respondents do not have any difficulties in adapting the playground according to the peculiarities of children with hearing impairments. 14.6% do not take into account the recommendations related to the use of residual hearing and ensuring maximum visibility, and 4.9% of students do not cope with this task at all.

The same is true of changing the appliances used. 80.5% of the participants took into account all the features of children with varying degrees of hearing impairment, 14.6% have small gaps related to the activation of all working senses in the selection of equipment, and 4.9% – significant ones.

68.3% of the respondents are able to make any changes in the rules of the games for the successful and full inclusion of children with hearing impairments, and 7.3% – do not know how. 24.4% of the respondents partially cope with this challenge, as their problems are related to the selection of appropriate visual aids in order to create preconditions for equality, compliance with the rules, contra-indications for physical activity of hearing-impaired children and lack of on the sense of when it is most appropriate to include an assistant.

56.1% of the students choose the appropriate means of communication according to the preferences of the child with hearing impairment and correctly combine the possible teaching methods. Unfortunately, over 1/3 of the participants (36.6%) experience some difficulties in performing these activities, and 7.3% – significant ones.

The summarized results show that 73.1% of the respondents have a high level of adaptations to the method. 22% of the students have some gaps in two or more areas, and 4.9% show a low level of skills. These are the participants who do not fully consider the possibilities or try to make adaptations without reading and thinking about all the recommendations and guidelines that are given when working with children with hearing impairments.

The method of Lieberman and Houston-Wilson is suitable for adapting mobile games for children with hearing impairments, as it creates the preconditions for overcoming communication difficulties by selecting appropriate ways of communication and instruction. It also allows you how to modify the rules, equipment and playing area according to the needs and abilities of children. It is no coincidence that a high percentage of the students were excellent in solving cases, although the training was conducted only online. Theoretically, they form a base of skills for the inclusion of hearing-impaired children in mobile games, which will be upgraded in their future real work related to the processes of inclusion of this group of children.

References:

1. Block M. A Teacher's Guide to Including Students with Disabilities in General Physical Education. Baltimore, – Maryland, 2016.
2. Bulgarian Sign Language Act, in force since 06.02.2021 – URL: https://www.lex.bg/bg/laws/ldoc/2137209455
3. Georgiva D., Valchev G. Specific features of interpersonal communication in deaf children. CBU International Conference Proceedings "Innovations in science and education", Prague, Czech Republic,– Vol. 8. 2020.– P. 81–87.
4. Ivanova V., Siderova D. Projections of the game with motional performances in the process of literary communication at pedagogical interaction with 6–7 years old children. Activities in Physical Education and Sport.– 3 (2). 2013.– P. 174–177.
5. Lieberman L., Houston-Wilson C. Strategies for inclusion: physical education for everyone.– Human Kinetics, 2018.
6. Rouse P. Inclusion in physical education.– Human Kinetics, 2009.
7. Shapkova L. V. Corrective outdoor games and exercises for children with developmental disabilities.– Moscow.
8. Van Coppenolle H. Count me in – A guide to Inclusive Physical Activity, Sport and Leisure for Children with a Disability.– Leuven, 2006.
9. Winnick J., Porretta D. Adapted Physical Education and Sport. Human – Kinetics, 2017.